REMARKS

I. Introduction

With the addition herein of new claim 31 without prejudice, claims 1 to 31 are currently pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicant gratefully acknowledges the time taken by the examiner in discussing the above-referenced patent application in the course of a telephone interview on August 29, 2005. In that telephone interview, the references of Unger and Britten (see below) were discussed and amendments to the claims were considered – however, no agreement was reached with respect to the patentability of the present claims.

II. Rejection of Claims 1, 2, 4, 7, 10, 12, 17, 25 and 26 Under 35 U.S.C. § 102(b)

Claims 1, 2, 4, 7, 10, 12, 17, 25 and 26 were rejected under 35 U.S.C. 102(e) as anticipated by U.S. Patent No. 5,985,166 ("Unger"). Applicant respectfully submits that Unger does not anticipate the present claims for the following reasons.

Claim 1 relates to a fluid meniscus process. Claim 1 recites that the process includes the step of holding at least a portion of a first surface of an object with a holding fixture, such that at least a portion of a second surface of the object is exposed. Claim 1 recites that the process includes the step of injecting at least one fluid in a tank such that a fluid meniscus is formed. Claim 1 also recites that the process includes the step of contacting at least a portion of the second surface of the object with at least a portion of the fluid meniscus. Claim 1 has been amended herein without prejudice to recite that the process includes the step of moving the object and the tank in two or more consecutive lateral directions relative to each other, the meniscus being in contact with the object during each one of the two or more consecutive lateral direction movements. Support for these amendments can be found, for example, at page 8, lines 20 to 22 of the Specification which states that "[t]he substrate 14, could be ... scanned over the fluid meniscus 16, as many times as necessary to achieve the desired results", and at page 8, line 25 to page 9, line 2 of the Specification which states that "Fig.1A-1D, illustrate schematically such motion as it progresses from right (Fig. 1A) to left (Fig. 1B, 1C), and back to the right (Fig.

1D)." Claim 1 further recites that the process includes the step of removing the object after at least one contact with the fluid meniscus.

Unger purports to describe "[a] two-phase etching system having an etchant solution and an overlayer of a protective solvent." Abstract. Unger states that "[t]he physical properties of the etchant solution and the protective solvent are matched to form a substantially flat meniscus on the top surface of the etchant solution around a fiber immersed in the protective solvent and the etchant solution." Abstract. Specifically, Unger states that "[i]n operation, one end of the fiber 340 is immersed in the etchant 320." Column 5, lines 1-2, emphasis added. Unger states that "the fiber 340 is then withdrawn from the etchant." Column 5, lines 9-10, emphasis added. Unger concludes that "[c]onvective flows within the etchant solution are maintained to form a smooth and sharp fiber probe with a small tip apex." Abstract.

The Office Action states that Unger teaches "a fluid meniscus process comprising the steps of holding at least a portion of a first surface of an object (fiber) with a holding fixture(350) such that at least a portion of a second surface of the object is exposed, injecting (providing) at least one fluid in a tank (310) such that a fluid meniscus is formed, contacting at least a portion of the second surface of the object with at least a portion of the fluid meniscus moving the object and the tank sequentially in two or more directions relative to each other (immersion and removal) and removing the object after at least one contact with the fluid meniscus." Office Action at page 3.

It is respectfully submitted that Unger does not anticipate claim 1 for at least the reason that Unger does not disclose, or even suggest, all of the features recited in claim 1. For example, Unger does not disclose, or even suggest, moving the object and the tank in two or more lateral directions relative to each other, as recited in claim 1. As set forth above, the Office Action states that "Unger teaches ... moving the object and the tank sequentially in two or more directions relative to each other (immersion and removal)." Office Action at page 3, emphasis added. Unger describes that "it is contemplated that the etched neck should point straight down from the meniscus." Column 8, lines 12-13. Thus, Unger at most teaches the immersion and removal of the fiber performed in the up and down directions, e.g., not two or more lateral directions.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that Unger does not anticipate claim 1 because Unger does not disclose, or even suggest, all of the features recited in these claims.

As for claims 2, 4, 7, 10, 12, 17, 25 and 26, each of which ultimately depend from and include all of the limitations of independent claim 1, it is respectfully submitted that Unger does not anticipate these dependent claims for at least the same reasons given above in support of the patentability of independent claim 1.

III. Rejection of Claims 1 to 19 and 23 to 27 Under 35 U.S.C. § 103(a)

Claims 1 to 19 and 23 to 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,660,642 ("Britten") in view of U.S. Patent No. 5,171,393 ("Moffat"). Applicants respectfully submit that claims 1 to 19 and 23 to 27 are not unpatentable for at least the following reasons.

Respectfully, the combination of Britten and Moffat does not render claim 1 unpatentable for at least the reason that the combination of Britten and Moffat does not disclose, or even suggest, all of the limitations of claim 1. For instance, the combination of Britten and Moffat does not disclose, or even suggest, moving the object and the tank in two or more consecutive lateral directions relative to each other, the meniscus being in contact with the object during each one of the two or more consecutive lateral direction movements, as recited in claim 1. As more fully set forth above, the Specification describes that, in one embodiment, the substrate 14 is scanned over the fluid meniscus 16 one or more times such as by consecutively scanning to the right, to the left, etc.

In contrast, Britten purports to describe a device and process in which a substrate is moved relative to a holding tank having a fluid meniscus in a single lateral direction.

Specifically, Britten describes that "[t]he applicator assembly 8 comprises processing applicator 10 and rinse applicator 14, and is placed in close proximity to an inverted substrate surface 26 to be processed, such that the processing fluid 12 and the rinse water 16 both attach to the inverted substrate surface 26, forming menisci." Column 3, lines 18 to 23. Britten further describes that "[t]he applicator assembly 8 is then translated relative to the substrate surface 26 such that an area on the substrate is first contacted by the processing fluid 12 and then the rinse water 16." Column 3, lines 23 to 26. The evaporated solvent 20 that is provided in the reservoir 18 absorbs into the thin film 36 of the rinse water 16 located on the substrate surface 26, inducing the fluid to flow back to the rinse applicator 14 via a "Marangoni flow." See, for instance, column 3, lines 29 to 38. Britten does not describe that the object and the internal assemblies 15, 17 in which the fluid menisci are formed are moved relative to each other in two or more lateral directions, rather they are moved only in <u>one</u> lateral direction, e.g., the lateral direction shown by the arrow in Figure 1. In fact, the device of Britten <u>will not operate</u> if the substrate and the internal assembly 15, 17 having the fluid menisci are moved in any lateral direction other than the lateral direction shown by the arrow in Figure 1. Specifically, only when the substrate 26 is moved in one lateral direction, i.e., the left-pointing lateral direction shown by the arrow in Figure 1, relative to the internal assemblies 15, 17 will the wetted portion of the substrate surface 26 be brought into the proximity of the drying vapors of reservoir 18. If the substrate 26 is moved in a different lateral direction relative to the internal assemblies 15, 17, the wetted portion of the substrate surface 26 will not be brought into the proximity of the drying vapors of reservoir 18.

The Office Action admits that "Britten does not explicitly teach moving the object and the tank sequentially in two or more directions relative to each other" but argues that "[i]t would have been obvious to one of ordinary skill in the art at the time of invention to move the object and tank sequentially in two or more directions relative to each other as a matter of bringing the substrate into position for processing and subsequently performing the processing step as recited in Britten." Office Action at page 2. Furthermore, the Office Action states that "[i]t would have been obvious to one of ordinary skill in the art at the time of invention to bring the substrate (object) from a storage location (located either above or below or to the side of the processing location) to a processing location (as illustrated in Figure 1 of Britten) prior to processing (etching) the substrate." Office Action at page 5. However, for the reasons set forth

above, Britten does not disclose or suggest moving an object and a tank in more than one lateral direction relative to each other. Furthermore, to the extent that any movement of the object in Britten from a storage position into a processing position relative to the tank could be considered to constitute a movement of same in a lateral direction relative to each other, claim 1 recites moving the object and the tank in two or more lateral directions relative to each other, the meniscus being in contact with the object during each one of the two or more lateral direction movements. Therefore, even if moving the object and tank from a storage position into a processing position involves some lateral movement of these components -- which Applicant maintains is not disclosed or suggested by Britten -- it is respectfully maintained that Britten does not disclose or suggest that the meniscus is in contact with the object during any lateral movement. On the contrary, for the reasons set forth above, when the object and tank of Britten are in contact with each other, movement of these components in only one lateral direction relative to each other is possible.

Furthermore, Moffat is not relied upon to describe or suggest, and in fact does not describe or suggest, the features not described or suggested by Britten. Specifically, Moffat does not disclose, or even suggest, moving the object and the tank in two or more consecutive lateral directions relative to each other, the meniscus being in contact with the object during each one of the two or more consecutive lateral direction movements, as recited in claim 1.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As indicated above, nowhere does the combination of Britten and Moffat disclose, or even suggest, moving the object and the tank in two or more consecutive lateral

directions relative to each other, the meniscus being in contact with the object during each one of the two or more consecutive lateral direction movements, as recited in claim 1.

Since the combination of Britten and Moffat does not disclose, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Britten and Moffat does not render obvious claim 1.

Furthermore, it is respectfully submitted that the combination of Britten and Moffat does not render obvious claims 2 to 19 and 23 to 27, which depend from claim 1 and therefore include all of the limitations of claim 1. Thus, it is respectfully submitted that claims 2 to 19 and 23 to 27 are allowable for at least the same reasons that claim 1 is allowable. In re Fine, supra (any dependent claim that depends from a non-obvious independent claim is non-obvious).

Therefore, withdrawal of this rejection, and allowance of claims 1 to 19 and 23 to 27, is respectfully requested.

IV. Rejection of Claim 20 to 22 Under 35 U.S.C. § 103(a)

Claims 20 to 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Britten in view of Moffat and U.S. Patent No. 5,279,703 ("Haberger"). Applicants respectfully submit that claims 20 to 22 are not unpatentable for at least the following reasons.

Respectfully, the combination of Britten, Moffat and Haberger does not disclose, or even suggest, all of the limitations of claim 1, from which claims 20 to 22 ultimately depend. As set forth more fully above, the combination of Britten and Moffat does not disclose, or even suggest, all of the limitations of claim 1. Furthermore, Haberger is not relied upon to describe or suggest, and in fact does not describe or suggest, the features not described or suggested by the combination of Britten and Moffat. Specifically, Haberger does not disclose, or even suggest, moving the object and the tank in two or more consecutive lateral directions relative to each other, the meniscus being in contact with the object during each one of the two or more consecutive lateral direction movements, as recited in claim 1.

Since the combination of Britten, Moffat and Haberger does not disclose, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Britten, Moffat and Haberger does not render obvious claims 20 to 22, which depend from claim 1 and therefore include all of the limitations of claim 1. It is

respectfully submitted that claims 20 to 22 are allowable for at least the same reasons that claim 1 is allowable. In re Fine, supra (any dependent claim that depends from a non-obvious independent claim is non-obvious). Therefore, withdrawal of this rejection, and the allowance of claims 20 to 22, is respectfully requested.

V. New Claim 31

New claim 31 has been added herein without prejudice. Support for this new claim can be found, for instance, at page 8, lines 20 to 22 of the Specification which states that "[t]he substrate 14, could be ... scanned over the fluid meniscus 16, as many times as necessary to achieve the desired results", and at page 8, line 25 to page 9, line 2 of the Specification which states that "Fig.1A-1D, illustrate schematically such motion as it progresses from right (Fig. 1A) to left (Fig. 1B, 1C), and back to the right (Fig. 1D)." For at least the reasons set forth above with respect to claim 1, Applicant respectfully maintains that new claim 31 is patentable.

VI. Conclusion

Applicants respectfully submit that all of the pending claims of the present application are now in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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